In the Claims:

1. – 19. (Cancelled)

20. (Currently Amended) A method of treating a human cancer patient having a hematopoietic malignancy, the patient having undergone a malignant cell debulking procedure associated with at least partial loss of hematopoiesis, and having further undergone autologous stem cell transplantation incident to the debulking procedure, the patient being at risk of disease relapse due to a population of residual malignant cells that may remain viable in the patient following the debulking procedure, the method comprising:

(a) administering to the patient a dose of lymphocytes derived from a lymphocyte donor in a regimen selected so as to cause ~~at least~~ partial engraftment of said lymphocytes in the patient, said lymphocyte donor being allogeneic with the patient; and

(b) subsequently administering to the patient a dose of stem cells derived from a stem cell donor in a regimen selected so as to cause ~~minimal~~ graft-versus-host disease (GVHD) in the patient, said stem cell donor being allogeneic with the patient, said GVHD having a grade selected from a range of grade I to grade II, thereby treating the ~~cancer~~ hematopoietic malignancy in the patient.

21. (Previously Presented) The method of claim 20, wherein said regimen selected so as to cause said minimal GVHD in the patient is selected so as to cause a clinically significant graft-versus-malignant cell response in the patient.

22. (Withdrawn) The method of claim 20, wherein said regimen comprises the following steps in sequence:

(i) treating said patient by administration of about 10^7 cells/kg to about 10^9 cells/kg of HLA-compatible, allogeneic peripheral blood lymphocytes;

(ii) monitoring said patient for indications of a graft-versus-malignant cell response or for indications of a graft-versus-host response; and

(iii) if no or insufficient graft-versus-malignant cell response or graft-versus-host response develops in said patient, escalating said treatment by performing at least one procedure selected from the group consisting of:

(1) administration of a number of HLA-compatible, allogeneic peripheral blood lymphocytes greater than the number of lymphocytes administered in step (i);

(2) administration of a number of HLA-compatible, allogeneic peripheral blood lymphocytes at least as great as the number of lymphocytes administered in step (i), accompanied by administration of at least one T-cell-activating cytokine to said patient;

(3) administration of HLA-compatible, allogeneic cytokine-activated lymphocytes (CAL) to said patient; and

(4) administration of HLA-compatible, allogeneic CAL, accompanied by administration in vivo of at least one T-cell activating cytokine to said patient;

wherein more than one of said procedures is performed if no or insufficient graft-versus-malignant response or graft-versus-host response develops in said patient following said first or subsequent procedure.

23. (Withdrawn) The method of claim 22, wherein step (i) further comprises administration in vivo of at least one T-cell-activating cytokine to said patient.

24. (Withdrawn) The method of claim 20, wherein said regimen comprises the following steps in sequence:

(i) administering to said patient about 10^7 cells/kg to about 10^9 cells/kg of HLA-compatible, allogeneic peripheral blood lymphocytes and at least one T-cell-activating cytokine to said patient;

(ii) monitoring said patient for indications of a graft-versus-malignant cell response or for indications of a graft-versus-host response; and

(iii) if no or insufficient graft-versus-malignant cell or graft-versus-host response develops in said patient, administering about 10^7 cells/kg to about 10^9 cells/kg of HLA-compatible, allogeneic cytokine-activated lymphocytes (CAL) and at least one T-cell-activating cytokine to said patient.

25. (Withdrawn) The method of claim 20, wherein said regimen comprises the following steps in sequence:

(i) administering to said patient about 10^5 cells/kg to about 10^9 cells/kg of HLA-compatible, allogeneic peripheral blood lymphocytes, said HLA-compatible, allogeneic peripheral blood lymphocytes comprising cytokine-activated lymphocytes (CAL), and at least one T-cell-activating cytokine to said patient;

(ii) monitoring said patient for indications of a graft-versus-malignant cell response or for indications of a mild graft-versus-host response; and

(iii) if no or insufficient graft-versus-malignant cell or graft-versus-host response develops in said patient, administering about 10^5 cells/kg to about 10^9 cells/kg of HLA-compatible, allogeneic CAL and at least one T-cell-activating cytokine to said patient.

26. (Withdrawn) The method of claim 22, wherein said cytokine is selected from the group consisting of IL2, IL4, IL5, IL6, IL7, IFN-alpha, IFN-gamma and TNF-alpha.

27. (Previously Presented) The method of claim 20, wherein said autologous stem cells are obtained from bone marrow.

28. (Previously Presented) The method of claim 20, wherein said autologous stem cells are obtained from the peripheral circulation.

29. (Previously Presented) The method of claim 20, wherein said autologous stem cells are obtained from umbilical cord blood.

30. (Previously Presented) The method of claim 20, wherein the cancer is a leukemia.

31. (Previously Presented) The method of claim 20, wherein the cancer is a lymphoma.

32. (Previously Presented) The method of claim 20, wherein said lymphocyte donor is fully HLA-matched with the patient.

33. (Previously Presented) The method of claim 20, wherein said lymphocyte donor is at least HLA-haploidentical with the patient.

34. (Previously Presented) The method of claim 20, wherein said lymphocyte donor is HLA haplotype-mismatched with the patient at a single HLA locus.

35. (Withdrawn) The method of claim 20, wherein said regimen comprises the following steps in sequence:

(i) administering to said patient about 10^5 cells/kg to about 10^9 cells/kg of HLA-compatible, allogeneic peripheral blood lymphocytes, said HLA-compatible, allogeneic peripheral blood lymphocytes comprising cytokine-activated lymphocytes (CAL);

(ii) monitoring said patient for indications of a graft-versus-malignant cell response or for indications of graft-versus-host response; and

(iii) if no or insufficient graft-versus-malignant cell or graft-versus-host response develops in said patient, administering about 10^5 cells/kg to about 10^9 cells/kg of HLA-compatible, allogeneic CAL and at least one lymphocyte-activating cytokine to said patient.

36. (Withdrawn) The method of claim 23, wherein said cytokine is selected from the group consisting of IL2, IL4, IL5, IL6, IL7, IFN-alpha, IFN-gamma and TNF-alpha.

37. (Withdrawn) The method of claim 24, wherein said cytokine is selected from the group consisting of IL2, IL4, IL5, IL6, IL7, IFN-alpha, IFN-gamma and TNF-alpha.

38. (Withdrawn) The method of claim 25, wherein said cytokine is selected from the group consisting of IL2, IL4, IL5, IL6, IL7, IFN-alpha, IFN-gamma and TNF-alpha.

39. (Previously Presented) The method of claim 20, wherein said lymphocyte donor is a sibling of the patient.

40. (Previously Presented) The method of claim 20, wherein the patient is in partial remission with respect to the cancer prior to said administering to the patient said dose of lymphocytes.

41. (Cancelled)

42. (Previously Presented) The method of claim 20, wherein said dose of said lymphocytes is a split dose which includes a first administration of said lymphocytes in a regimen selected so as to not lead to substantial engraftment of said lymphocytes in the patient.

43. (Previously Presented) The method of claim 20, wherein said dose of said lymphocytes is selected from a range of about ten million cells per kilogram to about one billion cells per kilogram.

44. (Cancelled)

45. (Currently Amended) The method of claim 20, wherein said ~~minimal~~ GVHD is mucocutaneous GVHD.

46. (Currently Amended) The method of claim 20, wherein said ~~minimal~~ GVHD ~~is GVHD involving~~involves the oral cavity.

47. (Currently Amended) The method of claim 20, wherein said ~~minimal~~ GVHD ~~is GVHD involving~~involves the skin.

48. (Currently Amended) The method of claim 20, wherein said ~~minimal~~ GVHD ~~is GVHD~~does not substantially ~~involving~~ involve the intestines.

49. (Currently Amended) The method of claim 20, wherein said ~~minimal~~ GVHD ~~is GVHD~~does not substantially ~~involving~~ involve the liver.

50. (Currently Amended) The method of claim 20, wherein said ~~regimen minimal~~ GVHD is acute GVHD.

51. (Currently Amended) The method of claim 20, wherein said ~~minimal~~ GVHD is chronic GVHD.

52. (Previously Presented) The method of claim 20, wherein said stem cell donor is fully HLA-matched with the patient.

53. (Previously Presented) The method of claim 20, wherein said stem cell donor is at least HLA-haploidentical with the patient.

54. (Previously Presented) The method of claim 20, wherein said stem cell donor is HLA haplotype-mismatched with the patient at a single HLA locus.

55. (Previously Presented) The method of claim 20, wherein said stem cell donor is a sibling of the patient.

56. (Previously Presented) The method of claim 20, wherein said stem cell donor and said lymphocyte donor are syngeneic.

57. (Previously Presented) The method of claim 20, wherein said stem cell donor is said lymphocyte donor.

58. (Previously Presented) The method of claim 20, wherein said lymphocytes are peripheral blood lymphocytes (PBLs).

59. (Previously Presented) The method of claim 20, wherein the patient is a human.

60. (Previously Presented) The method of claim 20, wherein said administering to the patient said dose of lymphocytes is effected during a period selected from the range of 90 to 124 days following said autologous stem cell transplantation.

61. (Previously Presented) The method of claim 20, wherein said administering to the patient said dose of stem cells is effected following said administering to the patient said dose of lymphocytes.

62. (Previously Presented) The method of claim 20, wherein said administering to the patient said dose of stem cells is effected following said at least partial engraftment of said lymphocytes in the patient.

63. (Previously Presented) The method of claim 20, further comprising monitoring the patient for levels of malignant cells deriving from said population of residual malignant cells prior to said administering to the patient said dose of stem cells.

64. (Previously Presented) The method of claim 20, wherein said administering to the patient said dose of lymphocytes is only effected during a period selected from the group consisting of:

(i) a period starting more than about one day following said autologous stem cell transplantation;

(ii) a period starting at a time following said autologous stem cell transplantation selected from the group consisting of about 5 weeks, about 6 weeks, about 7 weeks, about 55 days, about 8 weeks, about 58 days, about 10 weeks, about 71 days, about 11 weeks, about 90 days, about 14 weeks, and about 20 weeks; and

(iii) a period ending about 20 weeks following said autologous stem cell transplantation.

65. (New) The method of claim 20, wherein the hematopoietic malignancy is a lymphoma.

66. (New) The method of claim 20, wherein the hematopoietic malignancy is a B-cell lymphoma.

67. (New) The method of claim 20, wherein the hematopoietic malignancy is a non-Hodgkin's lymphoma.

68. (New) The method of claim 20, wherein the human cancer patient is an adult.

69. (New) The method of claim 20, wherein said regimen selected so as to cause GVHD in the patient is further selected so as to cause permanent engraftment of said dose of stem cells.